

**THE PHYSIOLOGY AND PATHOLOGY OF EXPOSURE TO STRESS. A TREATISE BASED ON THE CONCEPT OF THE GENERAL ADAPTATION SYNDROME AND THE DISEASES OF ADAPTATION.**—By Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada). First Edition. 1950. Published by ACTA Inc., Medical Publisher, Montreal, Canada. Pp. xx plus 1025 including references. Illustrated. Price, \$14.00

## II

**ANNUAL REPORT ON STRESS.**—By The same Author and Publisher. 1951. Pp. xxxii plus 644. Illustrated. Price, \$10.00

## III

**THE STORY OF THE ADAPTATION SYNDROME.**—By the same Author and Publisher. 1952. Pp. 225. Illustrated. Price, \$4.50

FROM a chapter in Professor Selye's 'Textbook on Endocrinology' (1948), entitled General Adaptation Syndrome, grew 'Stress' in 1950; 'Annual Report on Stress' in 1951; and 'The Story of the Adaptation Syndrome' in 1952.

A mighty oak is growing from an acorn.

The growth is truly mighty as it towers above all other causes of morbidity and disease sky-high, like a benevolent dictator who undertakes to solve (and perhaps does solve) all national problems, in conformity with the wishes, aspirations and even prejudices of the people.

For the presentation to the readers of the theme of the Stress one could not do better than take the last book first, for that is undoubtedly the purpose of the last book.

The book is built round 6 wire-recordings of lectures slightly edited. The first lecture deals with the evolution of the Stress concept and is a 'purely descriptive characterization of the adaptation syndrome'. The author as an 18-year-old medical student at the German University of Prague, in 1925, was struck with the 'general syndrome of sickness' which is superimposed on all specific diseases. Ten years later, in 1935, the same thought rose again, under different and for the time being deeply distressing circumstances. The author, after acquiring a very high degree of dexterity in removing endocrine organs from animals, and thus adding to or subtracting from their systems at will whatever he desired, thought that he had discovered a new hormone characterized in its action by a peculiar triad of manifestations: (i) adreno-cortical enlargement, (ii) acute involution of the thymicolympathic apparatus, and (iii) the appearance of bleeding ulcers in the stomach and duodenum. Such a discovery at the age of 28 made him supremely happy for a few days. The disappointment, however, was waiting at the door. It came in as soon as it was realized that the triad was a non-specific reaction of the system to the injection of foreign protein, etc.: the impure 'hormone' the severer the triad. The animals under experiment were showing syndrome of sickness with which the medical student of 10 years ago was struck. This was the General Adaptation Syndrome or GAS, in response to Stress.

The second lecture deals with the dynamics of the GAS and the rôles of the adrenal cortex and the anterior pituitary. Simple pictures of the action of Stressors (with plenty of space round them to facilitate comprehension—overcrowding in pictures and texts the

reviewer considers a stress which overpowers comprehension thereof) show the dynamics of the process.

The third lecture deals with the diseases of adoption: effects of overdosage with DCA (desoxycorticosterone, the corticoid of the adrenals) and STH (somatotrophic hormone or growth hormone from the anterior pituitary). More diagrams follow.

The fourth lecture deals with the circumstances under which the same GAS, gone astray, constitutes different disease. The 'Endocrine Kidney' is explained. Its sole function is the raising of blood pressure. It can be produced at will in experimental animals.

The fifth lecture deals with 'Antiphlogistic hormones' which exhibit certain types of inflammation (as opposed to the 'phlogistic hormones' which promote certain types of inflammation). Diagrams and photographs illustrate the themes. ACTH and cortisone are discussed in detail.

The sixth lecture catalogues evidence for and against the concept of GAS. The evidence adduced is of a high order, including photographs and photomicrographs. The legend under the picture on page 169, however, could have been 'The typical tetrad of the alarm reaction', *tetrad* instead of *triad*, depicting four bits from the body.

The seventh lecture gives a general summary and outlook. Having learned more about 'just being sick . . . we might be in a position to improve upon Nature's own defence against injury as such, no matter how produced'.

The last book, glimpses into which have been described above, will provide interesting and instructive reading to all physicians. The style and presentation enable the reader to follow the themes like consecutive events in a detective story.

On returning to the first book, the Stress proper, one is impressed by the comprehensiveness of it. All that could be brought under Stress has been dealt in it. It is dedicated to those who suffer from Stress. 'But most personally' it is dedicated to the author's wife 'for she understood that I cannot and should not be cured of my Stress but merely taught to enjoy it'. The frontispiece of this book reproduce 'The light' by Fretz E. Chenberg and is labelled Relief from Stress. So it is on otherwise tense faces of wasting bodies: resignation (on which a dissertation is due in terms of endocrinology, in one of the annual reports or even in a booklet).

On returning to second book, First Annual Report on Stress, one realizes the ever-expanding scope of the concept and repairs of the damage done by the runaway horse named GAS. One such repair is adrenalectomy 'which is notoriously effective in diminishing the blood pressure and in preventing the hypertension normally produced by a variety of pressor agents'. Similar repairs thought of and effected during the year are likely to be included in the future annual reports. The frontispiece of the annual report under review brings before the world the Stress crying out for help through human eyes of 'Pleading Women of Devdhar Village in North India during the Famine of 1951'—courtesy LIFE (c) TINE Inc.

One looks forward to the Annual Report on Stress for 1952: Our sweetest songs are those which tell of saddest thought.

In appreciating these books one must not forget one's gratitude to Mrs. Selye who has allowed the author to remain Stress-minded and has even made him Stress-loving. In using the English term for the conjugality one takes the tip from the author himself who recommends English as a substitute for Latin for the development of science, in the aforesaid first annual report (p. xxv). It will describe the developers of science equally well.